

GyroTracer Directional:

Date: 10/22/2018
 Operator : Adrian Bruner
 API: 05-123-12752
 Well Name: **Lehan 3**
 Field : Noble Energy Inc
 Tool Type And Number: 1719
 Bottom Depth : 6950.00
 Total Well Depth: 7254.00
 Latitude : 40.33233 N
 Longitude : 104.68461 W
 Grid Offset : 0.53

**Starting Point Coordinates (in local grid):**

Northing: 0.00 Easting: 0.00 Altitude: 4691.00

Description:

Azimuth measured in degrees and referenced to local grid

Inclination measured from Vertical

Length measured in US survey feet

Start Time: 10/22/2018 10:09

End Time: 10/22/2018 11:13

| Depth | Inclination | Azimuth | Closure Direction | True Depth | Coordinates | | Dogleg Severity | Closure Distance |
|----------|-------------|---------|----------------------|------------|-------------|---------|--------------------|---------------------|
| | | | | | +N/-S | +E/-W | | |
| 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 100.000 | 0.360 | 289.368 | 345.964 | 100.000 | 0.600 | -0.150 | 0.360 | 0.618 |
| 200.000 | 0.065 | 21.273 | 321.308 | 199.999 | 0.565 | -0.452 | 0.382 | 0.723 |
| 300.000 | 0.320 | 281.939 | 313.818 | 299.997 | 0.716 | -0.746 | 0.207 | 1.034 |
| 400.000 | 0.597 | 319.241 | 321.836 | 399.993 | 1.448 | -1.138 | 0.370 | 1.842 |
| 500.000 | 0.552 | 352.463 | 326.840 | 499.989 | 2.188 | -1.430 | 0.331 | 2.614 |
| 600.000 | 0.332 | 220.430 | 321.349 | 599.987 | 2.262 | -1.809 | 0.868 | 2.896 |
| 700.000 | 0.359 | 256.417 | 314.766 | 699.986 | 2.123 | -2.140 | 0.299 | 3.015 |
| 800.000 | 0.321 | 255.706 | 306.861 | 799.984 | 1.930 | -2.575 | 0.156 | 3.218 |
| 900.000 | 0.112 | 38.756 | 301.174 | 899.983 | 1.717 | -2.837 | 0.407 | 3.316 |
| 1000.000 | 0.282 | 192.935 | 299.016 | 999.982 | 1.603 | -2.891 | 0.265 | 3.305 |
| 1100.000 | 0.104 | 39.063 | 299.927 | 1099.980 | 1.508 | -2.620 | 0.245 | 3.023 |
| 1200.000 | 0.253 | 73.635 | 305.480 | 1199.978 | 1.508 | -2.116 | 0.212 | 2.598 |
| 1300.000 | 0.182 | 195.752 | 295.244 | 1299.976 | 1.017 | -2.156 | 0.407 | 2.384 |
| 1400.000 | 0.340 | 236.305 | 279.127 | 1399.973 | 0.362 | -2.253 | 0.461 | 2.282 |
| 1500.000 | 0.312 | 240.023 | 264.880 | 1499.970 | -0.222 | -2.479 | 0.049 | 2.489 |
| 1600.000 | 0.298 | 217.881 | 253.619 | 1599.966 | -0.870 | -2.960 | 0.101 | 3.085 |
| 1700.000 | 0.665 | 241.771 | 250.488 | 1699.961 | -1.336 | -3.771 | 0.357 | 4.001 |
| 1800.000 | 0.732 | 280.965 | 252.084 | 1799.954 | -1.576 | -4.876 | 0.450 | 5.124 |
| 1900.000 | 0.630 | 279.267 | 254.996 | 1899.945 | -1.644 | -6.135 | 0.182 | 6.351 |
| 2000.000 | 0.590 | 258.424 | 257.280 | 1999.935 | -1.691 | -7.493 | 0.221 | 7.681 |
| 2100.000 | 0.757 | 294.928 | 259.267 | 2099.926 | -1.665 | -8.786 | 0.506 | 8.942 |
| 2200.000 | 0.842 | 300.811 | 262.638 | 2199.913 | -1.335 | -10.333 | 0.329 | 10.419 |
| 2300.000 | 0.894 | 318.683 | 268.522 | 2299.896 | -0.303 | -11.728 | 0.360 | 11.732 |

| | | | | | | | | |
|----------|-------|---------|---------|----------|---------|---------|-------|--------|
| 2400.000 | 1.096 | 317.987 | 275.909 | 2399.880 | 1.293 | -12.488 | 0.203 | 12.554 |
| 2500.000 | 1.156 | 333.323 | 281.185 | 2499.865 | 2.655 | -13.426 | 0.344 | 13.686 |
| 2600.000 | 1.098 | 331.303 | 285.678 | 2599.850 | 4.041 | -14.399 | 0.135 | 14.956 |
| 2700.000 | 0.584 | 326.017 | 288.346 | 2699.838 | 5.099 | -15.376 | 0.539 | 16.199 |
| 2800.000 | 0.872 | 288.327 | 290.592 | 2799.828 | 6.101 | -16.238 | 0.601 | 17.346 |
| 2900.000 | 0.593 | 303.660 | 291.742 | 2899.819 | 6.895 | -17.291 | 0.264 | 18.615 |
| 3000.000 | 0.966 | 299.259 | 292.990 | 2999.809 | 7.758 | -18.286 | 0.682 | 19.864 |
| 3100.000 | 1.100 | 296.697 | 293.835 | 3099.797 | 8.606 | -19.479 | 0.127 | 21.296 |
| 3200.000 | 0.672 | 312.260 | 293.855 | 3199.787 | 9.143 | -20.676 | 0.433 | 22.607 |
| 3300.000 | 0.585 | 259.644 | 293.372 | 3299.780 | 9.371 | -21.684 | 0.577 | 23.622 |
| 3400.000 | 0.347 | 283.737 | 292.569 | 3399.778 | 9.186 | -22.101 | 0.164 | 23.934 |
| 3500.000 | 0.585 | 198.486 | 291.040 | 3499.774 | 8.645 | -22.473 | 0.759 | 24.078 |
| 3600.000 | 0.794 | 225.962 | 288.507 | 3599.767 | 7.757 | -23.174 | 0.378 | 24.437 |
| 3700.000 | 0.736 | 219.736 | 285.182 | 3699.754 | 6.522 | -24.033 | 0.146 | 24.902 |
| 3800.000 | 0.805 | 201.451 | 281.416 | 3799.736 | 5.071 | -25.112 | 0.246 | 25.619 |
| 3900.000 | 1.245 | 218.034 | 278.113 | 3899.719 | 3.749 | -26.298 | 0.400 | 26.564 |
| 4000.000 | 1.262 | 206.869 | 274.251 | 3999.697 | 2.038 | -27.422 | 0.291 | 27.498 |
| 4100.000 | 1.139 | 222.278 | 271.171 | 4099.678 | 0.586 | -28.638 | 0.310 | 28.644 |
| 4200.000 | 1.012 | 233.460 | 267.738 | 4199.654 | -1.176 | -29.783 | 0.302 | 29.807 |
| 4300.000 | 1.331 | 187.301 | 264.696 | 4299.635 | -2.826 | -30.441 | 0.986 | 30.572 |
| 4400.000 | 0.452 | 218.433 | 262.517 | 4399.616 | -4.149 | -31.590 | 0.890 | 31.861 |
| 4500.000 | 0.876 | 197.550 | 260.344 | 4499.595 | -5.598 | -32.903 | 0.422 | 33.376 |
| 4600.000 | 0.749 | 208.327 | 258.689 | 4599.584 | -6.749 | -33.740 | 0.181 | 34.409 |
| 4700.000 | 1.251 | 203.927 | 256.395 | 4699.567 | -8.331 | -34.423 | 0.265 | 35.417 |
| 4800.000 | 1.423 | 198.536 | 253.413 | 4799.544 | -10.387 | -34.870 | 0.243 | 36.384 |
| 4900.000 | 1.613 | 173.879 | 249.957 | 4899.511 | -12.869 | -35.275 | 0.574 | 37.549 |
| 5000.000 | 1.581 | 165.308 | 246.334 | 4999.477 | -15.422 | -35.188 | 0.233 | 38.419 |
| 5100.000 | 1.337 | 172.950 | 243.310 | 5099.453 | -17.510 | -34.830 | 0.277 | 38.984 |
| 5200.000 | 1.169 | 158.722 | 240.621 | 5199.434 | -19.335 | -34.343 | 0.325 | 39.412 |
| 5300.000 | 0.984 | 130.511 | 238.346 | 5299.420 | -20.735 | -33.633 | 0.747 | 39.511 |
| 5400.000 | 0.378 | 162.478 | 236.541 | 5399.411 | -21.709 | -32.850 | 0.558 | 39.375 |
| 5500.000 | 0.708 | 121.967 | 235.156 | 5499.404 | -22.339 | -32.088 | 0.464 | 39.098 |
| 5600.000 | 0.473 | 107.421 | 234.475 | 5599.398 | -22.397 | -31.370 | 0.264 | 38.545 |
| 5700.000 | 0.214 | 151.051 | 233.904 | 5699.394 | -22.414 | -30.741 | 0.421 | 38.045 |
| 5800.000 | 0.092 | 357.597 | 233.283 | 5799.389 | -22.489 | -30.152 | 0.299 | 37.615 |
| 5900.000 | 0.232 | 348.321 | 232.826 | 5899.385 | -22.515 | -29.690 | 0.133 | 37.261 |
| 6000.000 | 0.497 | 57.127 | 232.137 | 5999.381 | -22.931 | -29.495 | 0.483 | 37.360 |
| 6100.000 | 0.485 | 174.884 | 231.767 | 6099.379 | -23.292 | -29.564 | 0.830 | 37.637 |
| 6200.000 | 0.588 | 112.946 | 231.117 | 6199.377 | -23.530 | -29.178 | 0.561 | 37.484 |
| 6300.000 | 0.433 | 319.088 | 230.626 | 6299.375 | -23.650 | -28.819 | 0.892 | 37.280 |
| 6400.000 | 0.519 | 130.425 | 230.258 | 6399.372 | -23.700 | -28.504 | 0.532 | 37.070 |
| 6500.000 | 0.204 | 345.749 | 229.983 | 6499.370 | -23.576 | -28.079 | 0.607 | 36.664 |
| 6600.000 | 0.171 | 297.721 | 229.869 | 6599.368 | -23.480 | -27.853 | 0.199 | 36.429 |
| 6700.000 | 0.247 | 39.438 | 229.832 | 6699.366 | -23.266 | -27.563 | 0.321 | 36.069 |
| 6800.000 | 0.399 | 359.651 | 229.814 | 6799.363 | -23.021 | -27.255 | 0.340 | 35.676 |
| 6900.000 | 0.246 | 300.068 | 229.635 | 6899.359 | -22.817 | -26.842 | 0.434 | 35.230 |
| 6950.000 | 0.180 | 88.730 | 229.626 | 6951.038 | -22.688 | -26.683 | 0.349 | 35.024 |